

26

[From the BRITISH MEDICAL JOURNAL, Nov. 17th, 1877.]

A CASE OF PECULIAR CROWING INSPIRATION IN A NEW-BORN CHILD.*

By HUGH MILLER, M.D.,
Physician-Accoucheur to the Glasgow Maternity Hospital.

BEFORE I relate the case which forms the more immediate object of this paper, allow me to give you a few particulars bearing upon it, which the family history reveals. The lady—the mother of the child—had not been in good health for years. While a young lady, her family physician ordered her to the Mediterranean, and during her stay there she married, and afterwards gave birth to the two eldest of her children. The firstborn was a female, who lived two years and died of dysentery. The second child, born soon after this first one's death, was a son, and he died in his third year from scarlet fever. After an interval of three years, she gave birth to her third child, a female. She was the first of her family born in this country, and she exhibited from birth a peculiar crowing while breathing. The mother describes it as a catching of the breath, and she believes it originated in consequence of the exhaustion she suffered from through nursing the second child during his last illness. This third child lived only a few hours. Again, after an interval of about three years, another female child was born. This one had the peculiar crowing during each inspiratory effort; she lived twenty-four hours, and during that time every attempt was made to establish an easier state of breathing, but without success. About ten months after the event, my patient had a miscarriage.

Towards the end of 1876, the lady herself, for the first time, came under my care. Her statement to me was that she had suffered from rheumatism, with occasional neuralgic attacks, and that she had habitual indigestion. I found her suffering from the gastric sympathetic irritation of pregnancy, and from abdominal pains over the region of the womb and bladder, which were due either to her rheumatic condition or to previous inflammatory adhesions existing around the uterus. It was rare for her to take any food without feeling acidity in her stomach. The urine was normal, but the bladder was irritable; and this condition became so aggravated while in the erect position, that she was obliged to remain in bed during the last five months of her gestation. Altogether, she felt and looked in very poor health. Various remedies were employed to meet the disordered conditions just described, with only partial benefit. When her pregnancy had advanced seven months, she suffered from the symptoms of a miscarriage,

* Read before the Obstetric Medicine Section at the Annual Meeting of the British Medical Association in Manchester, August 1877.

without any known exciting cause for inducing it. The spasmodic pains were arrested by morphia suppositories, and after two days they ceased to trouble her. Henceforth, the gastric disorder was kept in check by pepsin and bismuth, while the irritation of the bladder was somewhat relieved by her taking tartarated iron. At full term, her labour began ; its onset was marked by the usual irregular and fitful pains, which in about two hours were succeeded by the regular bearing down ones, and the labour, which was natural, was completed within the usual period of a healthy multipara, and with no effort beyond that usually employed.

The child, a male, was fully matured ; it appeared to be well nourished, and was of the average size. From the first, its respiration was defective. It did not cry, and the attempts at inspiration were irregular, short, and very feeble ; they might be described rather as a gasp than as an inspiratory effort. Slapping the nates, and the alternate application of hot and cold water to the skin, increased the frequency of the child's efforts to breathe. A little blood was allowed to escape from the navel, with no beneficial result ; then the use of hot and cold baths was resorted to. The child was plunged in one of them to the neck, kept for a few minutes in it, and then quickly transferred to the other. This treatment was found of most advantage ; the skin began to show patches of a natural colour ; after a time, the breathing was more regular, and at length evidence of life was given by crying. Then, through the application of a sponge squeezed out of hot water alternately with one from cold water, and applied to the throat, increased facilities for breathing were given. It was evident, however, that, under the most favourable circumstances, the crowing spasmodic inspiration would continue. The lividity of the skin also was still present to such an extent as to indicate very defective aeration of the blood. At the end of two hours, I ceased using the sponges. I then placed it in warm cotton-wool, and gave it a few drops of brandy, with warm water, which was swallowed readily. Dr. Foulis, surgeon to the Throat Dispensary, who was sent for, now came in, and the child remained under his constant observation until it died. His statement of the case is, that the baby suffered from a continual impediment to the inspiration, in the form of a crowing long-drawn effort, ending usually with an abruptness which seemed to point to some obstacle in the glottis. Occasionally, there occurred a sort of collapse, with cyanosis and cessation of the breathing, which lasted for a minute at most, and was rallied from slowly under the use of alternate applications of hot and cold sponges to the chest. The inhalation of minute quantities of ether was tried, but, though it seemed to relieve the spasm, yet it did so rather by producing a sort of stupor than by any real benefit to the breathing. The only treatment which seemed of real use was holding the lower jaw forward by means of the fingers placed behind the angles, and so pushing it forwards. This effectually relieved the breathing for the time, and restored the colour of the lips and face to the natural rosy tint ; the crowing inspiration returning immediately on the relaxation of the forward pressure. Later on, however, the dyspnoëic attacks became more frequent, and the child died nineteen hours after the birth. Milk and a very little brandy were administered every two hours or so, in small quantities, and the swallowing did not seem to be much impaired except during the last hours of life.

That same evening we examined the body. We found a degree of venous congestion in the skin and organs generally. The thymus gland was, if anything, undersized. One third part only of the lung was ex-

panded ; the other two-thirds of the lung-tissue were non-crepitant, purple in colour, and almost solid to the feel. The heart and other thoracic and abdominal organs were not diseased. The brain was not examined. The larynx and trachea seemed small. The epiglottis was folded closely together. The diameter of the trachea was $5\frac{1}{2}$ millimètres ; the total length of the rima glottidis 5 millimètres, of which $3\frac{1}{2}$ millimètres was formed by the ligamentous part of the cord. The placenta, which was also examined, was found dotted over with a few minute fatty patches, which, however, did not extend deeply into the placental tissue, but were rather confined to the superficial layer ; otherwise it was healthy, and of the average size.

On consulting all the works at command on the subject of the size of the larynx at birth, Dr. Foulis failed to obtain anywhere such measurements as would enable him to give a definite statement as to the possible deviation in this case ; he therefore measured the larynx in other children of the same age as the one under notice, which had either been stillborn or had died just after birth. These gave the following results.

| | Diam. trachea below isthmus. | Rima glottidis. | Ligamentous cords. |
|---|---------------------------------|--------------------|-----------------------|
| 1. Subject of this paper (for comparison), full time..... | $5\frac{1}{2}$ mill. | 5 mill. | $3\frac{1}{2}$ mill. |
| 2. Female still-born child, full time | 5 " | $6\frac{1}{2}$ " | 4 " |
| 3. Male still-born child, full time..... | 5 " | 8 " | 5 " |
| 4. Male child, lived two days, full time.. | $4\frac{1}{4}$ " | $7\frac{1}{4}$ " | 4 " |
| 5. Male child, born three weeks before full time ; lived one week, and then died of pneumonia | 6 " | $7\frac{1}{2}$ " | $4\frac{1}{2}$ " |

The trachea, therefore, in our case was not too small. The rima glottidis, on the other hand, was shorter than in any other of the cases, and this difference may have aggravated the difficulty in inspiration. My little patient, however, impressed Dr. Foulis rather with the idea of a spasm or closure of the cords, such as he had observed at the Throat Dispensary in several adult cases. In these the cords went apart a little way at the commencement of inspiration, and during the latter part of the inspiratory act they closed together again, instead of going further apart as in normal cases ; and the peculiar breathing of the child under notice seemed to him to be produced in a like manner.

The peculiar features of this case do not end here. I mentioned that the first two children born on the shores of the Mediterranean lived at least two years, and, from the absence of any laryngeal peculiarity, would appear to have escaped the infirmity. I do not think, however, that the mere fact of being born in this country accounts for the presence of the defect ; neither was I able to discover the slightest trace of a constitutional syphilitic taint affecting parent or child ; and, after careful inquiry, I was satisfied that this was not the exciting cause of the defect. I have since learned that the offspring of several of the members of the lady's family were similarly affected at birth, and that the children so affected lived only a few hours. Others of the children who escaped the crowing at birth displayed a disposition to throat-affections ; and when attacked by disease in this region, although mild in type, they readily succumbed under it. With such a history before me, am I entitled to assume that the peculiarity is in any respect hereditary ? In my opinion, the facts of the case distinctly point in that direction. This leads further to the consideration of the treatment proper to be adopted in future should a case of the same sort occur in the family. We gave a fair trial to the ordinary means of obviating spasm, the age of the child rendering this a matter of diffi-

culty ; and our efforts having failed, the question of tracheotomy presented itself as the only remedy, although a desperate one, which might give a prospect of complete relief from the crowing, and, by enabling complete expansion of the lungs to take place, give also a hope of healthy respiration. It affords me pleasure to add, that the parents have consented, should another child be born to them similarly affected, to the adoption of this procedure, rather than to leave the child, as in the present case, to die by the slow process of suffocation.

The determination of the size of the larynx at birth is a point of some interest, which may be considered as not hitherto settled by actual measurements. The number of cases which my friend Dr. Foulis has been able to examine is only sufficient to give an approximate estimate. Irrespective of the case under consideration, the measurements given are very suggestive, and a step towards exact knowledge of the size of this important organ at birth has been thus secured. The case itself is in many respects unique, and I have brought it before you to elicit information as to how similar cases, if any, which may have been observed by others, have been treated, and also to ascertain if any plan can be devised less formidable than tracheotomy for the relief of a new-born child having this defect in its inspiratory efforts.



(52)

